



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

all of those who, either as students or teachers, may desire to avail themselves of the advantages of study and research here afforded."

Conducted in this spirit, and with the patronage of an intelligent public, we may hope for most excellent results. It affords the only means in the country for the study of the development of marine animals during the winter months, and affords a rare opportunity to naturalists in the city of New York, whom we personally envy.

PROCEEDINGS OF SOCIETIES.

IOWA ACADEMY OF SCIENCES, Iowa City.—June 23d. Prof. C. E. Bessey presented A Preliminary Catalogue of the Lichens of Iowa. His list of twenty-six species, collected principally in Central Iowa, includes probably about one fifth of the entire lichens of the State. He presented also A Preliminary Catalogue of the Orthoptera of Iowa, including thirty-nine species found in Central and Southeastern Iowa.

Mounds and Mound-Builders was the subject of a carefully prepared paper by Dr. P. J. Farnsworth, of Clinton, tending to show that the mound-builders were identical in race with the historical Indians of North America. The evidence offered was mainly based on resemblances in anatomical structure and modes of burial between the mound-builders and still existing Indian tribes.

Prof. Samuel Calvin, of the state university, described seven New Species of paleozoic Fossils, found mainly in Howard and Floyd counties, Iowa. He also presented a Notice of a Probable new Species of Elephant, from the modified drift near West Union, Iowa. The structure of the teeth differs from that of either *Elephans Americanus* or *E. primigenius*.

Prof. F. M. Witter presented Notes on the Land and Fresh-Water Shells found near Muscatine, of which he has determined fifty-two species.

The Deposits of the Chemung Group in Iowa were described by Professor Calvin as occupying a narrow area along the south side of Lime Creek for a few miles above Rockford, Floyd County, Iowa. It was shown that forty-five of the fossils of the group do not occur in other rocks in Iowa, and this together with the position of the deposits renders it proper to refer the group to a period above the Hamilton or to the Chemung. The further fact that three fourths of all the fossils in the group have been found nowhere else in the world, justifies the application of some distinctive title to the epoch, and the name "Rockford Shales" was proposed.

Professor Calvin also presented A Preliminary Notice of the Occurrence of Marcellus Shales in Iowa. This paper had reference to the discovery of a dark, somewhat bituminous shale beneath the Hamilton

limestone at Independence, Iowa. One of the shells found in this shale belonged to a genus that began its existence, so far as known, in the Marcellus shales, and this fact together with the position of the shale, justified its reference to the Marcellus epoch. The discovery of this shale with its carbonized plants explains the numerous reports that have gained circulation at various times, concerning the discovery of coal in regions occupied by Devonian rocks.

Professor Bessey read a note on The Colors of Iowa Wild Flowers, presenting tables prepared with a view of determining what influence the total amount of light and heat exerts on the predominant colors of the native Flora.

ACADEMY OF NATURAL SCIENCES, Philadelphia. — August 8th. Mr. Thomas Meehan referred to observations he had made this season on the nocturnal and diurnal expansion of flowers, and said that, contrary to the popular impression, it was not probable that light or its absence alone determined the opening of the blossoms. There were some plants, as for instance *Oenothera biennis* (the evening primrose), *Anagallis arvensis* (the pimpernel), and others, which remained open or otherwise, longer when the weather was humid or clear, and were looked on in consequence as a kind of floral barometers; but from other facts it was clear that it was not the weather merely, but some other incident accompanying the weather, which governed the case.

Though *Oenothera biennis* and other *Oenotheras* opened at evening, and if the atmosphere was moist would continue open the greater part of the next day, many species opened only in the daytime, and this they did regularly, quite regardless of meteorological conditions. *Oenothera serrata* of Colorado was one of these. It was regular in opening about noon, and the blossoms were all closed long before sundown.

In other allied families we saw similar divergences. In the cactus family *Opuntia* and *Mammillaria* opened only about midday, while most of the *Cereus* opened at night. The night-blooming cactus was a familiar example. But the chief interest was in the fact that many had their special hours of day or night for the expansion. The *Portulaca oleracea* (common purslane) opened about eight A. M., and by nine o'clock had performed all its functions, while a closely allied plant, the *Talinum teretifolium*, from the serpentine rocks of Chester County, opened at one P. M. and was closed by three o'clock. The conditions of the weather did not seem to influence them.

There was the same attention to daily periods in the growth of the parts of plants as well as in the expansion of the petals. In composite plants the floral growth was wholly in the morning, and was usually all over by nine or ten o'clock A. M. The elongation and expansion of the corolla was usually completed in an hour after sunrise, but the stamens grew for an hour more, and the pistils continued for still another. There was little if any growth in the floral parts after nine o'clock in a very

large portion of this order of plants. In grasses, Cyperaceæ, and some rushes also, the floral parts were very exact in their time of opening. In the plantains, *Plantago*, the pistils appeared a day or more in advance of the stamens, and these last appeared at about a regular time in each day. In *Luzula campestris* he had by a series of observations timed it exactly. Before nine the anthers were perfect, but by ten the pollen had been all committed to the winds and only dried matter remained. So far as he could ascertain, meteorological conditions did not influence the time in the least, in this case.

August 15th. An interesting communication from Dr. Charles Pickering on photographs of Tasmanians at the Centennial Exposition was read by the president. Dr. Pickering has been enabled by means of these portraits to refer the originals to the Papuan race or large New Guinea negro.

Mr. Martindale called attention to the genus *Opuntia*, the only genus of Cactaceæ found east of the Mississippi in the Northern States. Dr. Engelmann describes one species under the name *Opuntia Rafinesquii*, which includes two or three of the species described by Rafinesque. Mr. Martindale had collected in the neighborhood of Haddonfield, N. J., what he believes to be *Opuntia vulgaris*, a species which Dr. Engelmann had not before seen from any locality north of the Falls of the Potomac. The characters of the two species were described and contrasted. A specimen from Woodbury, N. J., was decided to be *Opuntia Rafinesquii*, as were also those from the neighborhood of the coast. Mr. Redfield had heretofore doubted the existence of *Opuntia Rafinesquii* in this quarter, and now believes that the form so called was but a variety of *Opuntia vulgaris*.

Dr. Allen called attention to a deformation in a domestic cow similar to that described by him recently as existing in a Brahmin bull. In the case under consideration a supernumerary anterior limb grows from the shoulder, but it ends in one toe only, instead of three, as in the former case. There is, however, a rudimentary toe and a small protuberance farther up the shaft of the metacarpus.

August 29th. A paper entitled Note on the Discovery of Representatives of two Orders of Fossils new to the Cretaceous Formation of North America, by Wm. M. Gabb, was presented for publication.

September 6th. A paper entitled On the Lingual Dentition, Jaw, and Genitalia of Carelia, Onchidella, and other Pulmonata, by Wm. G. Binney, was presented for publication.

Mr. Meehan called attention to a specimen of an exceedingly curious plant, *Welwitschia mirabilis*, on exhibition in the Portuguese African Section of Agricultural Hall, Centennial Exhibition. He also spoke of his observations upon *Mentzelia ornata*. The plant blooms at night. The flowers open for four nights in succession, after which they cease to do so. One flower was covered with gauze and found to produce seed as freely as those not so protected.

Dr. Asa Gray suggested that the capsules might be swollen without containing perfect seeds.

September 20th. Dr. Leidy spoke of the structure and habits of certain fresh-water rhizopods. In the genus *Hyalosphænia* the test or shell is homogeneous and transparent. Several species have been described, one of which had been discovered in the Sphagnum swamps of New Jersey, and from its resemblance to a butterfly, when the pseudopods or arms are extended, it had been named *Hyalosphænia papilio*. Pores were found to exist in the shell, through which the water passes in and out as the body dilates and contracts. Foreign substances adhere to the naked Amœbas on the part of the body opposite to that from whence the pseudopods are protruded. A sluggish *Amœba* had been observed to swallow rhizopods with shells, and, after digesting the soft parts, the calcareous covering was ejected. Others had been observed to select specimens of diatoms having green digestible matter in their interior, from those which were not possessed of such nutritive material.

At the request of Mr. Meehan, Dr. Engelmann, of St. Louis, spoke of the characters and geographical distribution of *Abies Fraseri*. It closely resembled the common balsam, *Abies balsamea*. The tree seems to be confined to the summit of a small number of mountains about six thousand feet in height. The most prominent distinguishing characters are found in the cones, which have protruding and recurved bracts. It has, however, been found that the microscopic structure of the leaves furnishes admirable distinctive characters. The peculiar structure of the leaves of all these trees allies them more closely to the ferns than to the higher plants. In *Abies balsamea* the cells under the epidermis which are devoid of chlorophyl or coloring matter are few in number, while in *Abies Fraseri* they are numerous and regularly distributed on the upper surface of the leaves. All the firs and many of the pines can thus be distinguished by the structure of the leaves alone. There are a great many plants in the mountains of North Carolina which are found only there. The name Black Mountains is due to the dark color of the *Abies Fraseri*, still more to *Abies nigra*.

Mr. Martindale spoke of the introduction of plants from other localities. He had within the past week collected specimens of *Leonurus sibiricus* at the mouth of the Wissahickon. It appeared to be perfectly naturalized in a space four or five feet square. Mr. Redfield suggested that the seeds might have come in the foreign wool used in the mills farther up the river.

Mr. Canby noticed the rapidity with which *Lespedeza striata* had spread over the western part of North Carolina, Eastern Tennessee, and all over the Alleghany range.

Mr. Gesner spoke of the great benefit derived from the growth of *Lespedeza striata* on pasture lands throughout the Southern States. It grew everywhere luxuriantly, and was eagerly eaten by cattle. It is salivating when eaten by horses, but not so when used by mules.

In continuation Dr. LeConte noticed the increase of introduced species of Coleoptera. One species of *Aphodius*, from the Gulf of St. Lawrence, had extended downward to Massachusetts. Another had spread from Maine to Virginia. Other insects introduced into New England had remained localized.

Mr. Gabb noticed the growth of an introduced plant, the Alfilarillo, *Erodium cicutarium*, in California.

September 26th. Mr. Martindale stated that the foreign plant spoken of by him as having been found at the mouth of the Wissahickon Creek had been determined by Dr. Gray to be *Leonurus glaucescens*. It comes from Siberia, and was probably brought among some of the Centennial exhibits, most likely by way of Japan. He did not think it came in wool, as suggested at a previous meeting.

Dr. Engelmann, of St. Louis, continued his remarks upon the conifers. These plants are found much earlier in geological formations than ordinary flowering plants, which is an additional reason for placing them below the latter. Peculiarities of wood and seed, as well as those of the leaves previously described, were dwelt upon, and the conclusion was reached that these plants stand as a connecting link between the endogens and the exogens.

Dr. McQuillen directed attention to a human skull in which, owing to the loss of the bicuspid and molar teeth in the left side of the lower jaw, an upper molar, failing to meet with the antagonizing tooth, protruded from its socket twice its original length. In addition to this, and from the same cause, the left upper jaw had fallen considerably below the level of the right side, and had in consequence lowered the orbit to such an extent as to produce marked disfigurement during life. The condition of this skull was contrasted with that of one in which all the teeth were in good condition, symmetrical in their arrangement, and illustrating in a marked degree the harmony of antagonism.

October 3d. Dr. Leidy spoke of the results of a dredging excursion on the Schuylkill River. The mud at the bottom of the river was found to be thoroughly saturated with coal-oil, and in consequence thereof all the animal and vegetable life, which the dredging party had expected to find in abundance, had been destroyed. It was believed that this absorption of the coal-oil by the river mud exemplified the formation of bituminous shale.

Dr. LeConte remarked that the only difference between the modern and the ancient bituminous bearing deposits was that in the case of the former the oil came from the refuse matter of the manufactories, and in the earlier formations it was absorbed immediately when exuded by the substances producing it. The origin of these oils from vegetable sources was alluded to.

Rev. Mr. McCook spoke of the architecture and habits of a species of ant, *Formica rufa*. The mature hills formed by these ants were

forty inches in height, thirty-six feet in circumference at the base, and eleven feet at the top. They had probably taken seven years to grow to this size. On account of the dryness of the season, little activity was at first observed among the builders, but a shower of rain commencing to fall, they immediately began to work. The mode of formation of the hills and galleries was described and illustrated by drawings and photographs. It was believed that no liquid was used in building the arches, but the pellets of which they were constructed were dovetailed into each other, and rain seemed necessary to cement the work. The greatest regularity in the galleries seemed to be north and south, while the long slope of the hills was towards the west. This did not seem to be at all dependent upon the direction of the wind, but appeared as if the ants actually build with regard to the points of the compass. The doors of the galleries were not closed at night, as described by Huber. Peculiarities of structures made by ants of the same species in Delaware County and at Rockland were described.

Dr. Leidy spoke of the destruction of plants by ants in the neighborhood of their nests, either by the action of formic acid or by eating the roots. He had observed that a species of grass, *Aristida*, was exempt from this destruction. Whether the ants allowed it to remain for the purpose of strengthening their structure, or because they did not find it palatable, he could not decide.

Mr. McCook stated that the ants observed by him extruded formic acid very vigorously, and he had observed yellow tracks on the trees, which might be owing to this cause.

Dr. Koenig remarked that formic acid would produce a natural cement with the calcareous particles of the mounds.

Dr. Chapman stated that the length of the cæcum given off from the rectum of an ostrich recently examined by him was thirty-five inches. It was believed that the comparative length of this part of the intestine seemed to depend upon the nature and amount of the food.

Mr. Meehan spoke of the *Akebia quinata*, an indigenous plant of Japan, where it bears fruit, although it had not been known to do so in this country until recently, when the fruit had been produced by a vine cultivated by Mr. Canby, of Wilmington, Del.

Mr. Meehan also exhibited a specimen of rare fungus of the genus *Phallus*, which he had recently found on his grounds for the first time in seven years. Its peculiar odor attracted meat flies in considerable numbers. The bearing of the facts spoken of upon the question of insect agency in fertilization was dwelt upon.

Dr. Leidy related his observations upon a species of *Phallus*, and mentioned the fact that insects carried the spores from place to place. The power of insects to convey gangrene and other poisons was spoken of in this connection.

The president announced that the Biological and Microscopical Section

of the Academy proposed giving a microscopical exhibition on the 16th inst.

The following papers were presented for publication: Note on *Ptiloris Wilsonii* Ogden, by James A. Ogden, M. D.; On the Extrusion of the Seminal Products in Limpets, with some Remarks on the Phyllogeny of *Docoglossa*, by Wm. H. Dall.

October 10th. Dr. LeConte spoke of some larvæ of beetles received from Mr. J. A. Lintner, of New York, which were said to be very destructive of carpets in Albany and the neighboring towns. They were determined to belong to the Dermestidæ, and on further investigation were decided to be the *Anthrenus scrophulariæ*, a European species which had not before been found in this country.

Dr. LeConte called attention to an observation he had seen published to the effect that finely powdered corrosive sublimate scattered upon ant hills drove the inhabitants to an insane rage, when they would fall upon each other and become involved in an inextricable mass, from whence none would escape alive.

ACADEMY OF SCIENCE, St. Louis. — October 2d. Mr. Riley made a communication on the insect pests at the Centennial Exposition.

October 16th. Professor Potter gave the results of his analysis of Peruvian lignite.

ACADEMY OF SCIENCES, New York. — October 16th. Mr. Alexis A. Julien read some Observations on Prehistoric Remains in Western North Carolina. Prof. Thomas Egleston read a paper entitled Vein Accidents in the Lake Superior Region.

BOSTON SOCIETY OF NATURAL HISTORY. — October 4th. Mr. Charles S. Minot read a paper on the Relationship of the Vertebrates and Worms, and Prof. A. Hyatt gave a description of an interesting Tubularian Hydroid.

October 18th. Dr. T. Sterry Hunt made a communication on the Geological Succession of the Crystalline Rocks.

APPALACHIAN MOUNTAIN CLUB. — October 11th. Mr. Wm. G. Nowell gave an account of an exploration of Carter Dome, near the Wild Cat River. He gave a detailed description of the route adopted and of the observations made there. The mountain and those about it he proposes to call the Carter Dome Group, and says that two or three days' work upon the top of the principal mountain will enable the club to obtain an uninterrupted view of all the encircling country. Mr. W. H. Pickering read a paper upon distant points visible from the White Mountains, in which he said it was possible to obtain two hundred and eighty views from Mount Washington, one hundred and twenty-one from Moosilauk, forty-three from Passaconway, and twenty-three from Mount Lafayette. An interesting discussion took place as to whether Katahdin is visible from Mount Washington. Professor C. E. Fay also read a paper concerning Black Mountain, alias Sandwich Dome, in which he favored an adherence to the old name as especially fitting and proper.